



## PLANNING AND SCHEDULING (2nd semester)

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**Work: week – 4**

**Academic Year : 2024-2025**

**Instructor: Ioannis Refanidis**

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You are given two files, which describe in the Planning Domain Definition Language (PDDL<sup>1</sup>) a domain (file StripsRover.pddl), named Rover, and a problem instance (file pfile3.pddl).<sup>2</sup>

Solve the problem "on paper" using:

- Regression planning in the space of states. Present in detail the steps of the construction of the plan, as you insert the actions one after the other. Each step should show the current set of goals.
- Partial order planning, in the space of the plans. Present only the final plan, showing the causal links and ordering constraints. You can present the final plan using a Gantt chart, accompanied by a legend where, having numbered the actions in the chart, you will list mention for each action precondition by which previous action it is supported (i.e., the causal links). Also, all ordering constraints should be mentioned. Assuming that all actions have a duration of one (1) unit of time, what is the shortest time to execute your plan?

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<sup>1</sup> <https://ipc08.icaps-conference.org/deterministic/PddlResources.html>, ρίξτε μια ματιά μόνο στην πρώτη έκδοση της γλώσσας, version 1.2.

<sup>2</sup> Τα αρχεία προέρχονται από τον 3ο διεθνή διαγωνισμό planning (3<sup>rd</sup> International Planning Competition – IPC), ο οποίος έγινε το 2002. <http://ipc02.icaps-conference.org/>